METHOD AND APPARATUS FOR RECEIVING INTERLEAVED STREAMS OF PACKETS THROUGH A CIRCULAR BUFFER

ABSTRACT

One embodiment of the present invention provides a system that reassembles multiple streams of Internet Protocol (IP) packets that have been converted into a single interleaved stream of transport protocol packets. Upon receiving the stream of the transport packets, the system reassembles the IP packets within a single IP packet buffer. At the same time, the system keeps track of the order in which reassembly is completed for the IP packets. This enables the system to read the IP packets out of the single IP packet buffer in the order in which reassembly is completed before forwarding the reassembled IP packets to destinations specified by IP addresses contained in the IP packets. Note that reading the IP packets out of the IP packet buffer in this order can minimize the latency for individual streams of IP packets because a given IP packet that is completed first does not have to wait for a previously started IP packet that has not been completed. Furthermore, using a single buffer for reassembling the multiple streams of IP packets greatly reduces the amount of memory required to assemble the IP packets.